Southern Forest Fire Laboratory: 5 Year Research Plan[1]

Dale D. Wade[2]

The Southern Forest Fire Laboratory (SFFL) located near Macon, GA is staffed by 8 research scientists and about 17 support personnel who have responsibility for fire and atmospheric sciences research within the 13 southeastern states that comprise Region 8 of the U.S. Forest Service. The first of three fire labs built in the U.S., the Macon Laboratory is the recognized leader in the development and application of prescribed fire and smoke management.

Broad research study areas are normally selected and approved at 5-year intervals. My presentation outlines the process that has resulted in the formulation of the SFFL research plan of action for the period 1985 - 1990 beginning with the 1984 Atlanta Prescribed Fire Symposium. A major part of the Atlanta Symposium was devoted to determining and ranking major prescribed fire research needs as daylighted by industrial, state, and federal fire managers from across the south. Researchable problem areas appearing in the "research concensus" that were identified as major issues by at least 2 of the 3 working groups were:

1. Estimating direct and indirect growth loss associated with various crown scorch levels.
2. Aerial ignition as a technique for prescribed - and wild - fire control.
3. Economics of prescribed burning.
4. Residual smoke and dispersion problems.
5. Better fire behavior data to expand the prescribed burning window especially in young stands.
6. Better site specific weather forcasts for prescribed burning.

These research needs, tempered by ongoing research, and staffing and instrumentation capabilities, served as the basis for developing the broad problem areas to be addressed during the 1985-1990 5-year period. This process which involved Southeastern Station management and Washington Office fire staff as well as SFFL personnel resulted in tentative agreement to maintain the present project and staff configuration. Assigned problem areas are as follows:

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[1] Paper presented at State Foresters & Fire Chiefs Southern Group Meeting held in Lexington, KY, May 20-23, 1985

[2] Project Leader - Fire Science Project, US Forest Service, Southern Forest Fire Labortatory.

RWU 2110 - Combustion Processes - Charles McMahon project leader.
Research scientists: Ralph Nelson & Jerry White

1. Develop knowledge of fire behavior processes including the relationship among fuel bed characteristics, flame geometry, energy release rates, spread rates, and other factors controlling fire behavior and fire effects.
2. Continue research on smoke characterization which would include emission factors, optical properties, and chemical and physical characteristics.
3. Determine the combustion products from treated wood products and wildland vegetation. Treatments will include wood preservatives and pesticides.

RWU 2111 - Fire Science - Dale D. Wade project leader.
Research scientists: Ragnar Johansen & David Weise

1. Develop knowledge about the effects of fire on loblolly and slash pine forests with emphasis on young stand management but that would include fire considerations for a complete rotation.
2. Develop knowledge of the fire behavior characteristics of spot fires resulting from aerial ignition using devices such as the "ping pong ball." Objective would be to develop ways to include the management of fire behavior by controlling ignition patterns as well as fuel and weather variables.

RWU 2112 - Forestry Weather - James Paul project leader.
Research scientists: Lee Lavdas

1. Develop guides to predict location and occurrence of smoke incidents on highways.
2. Evaluate and modify of existing meso-scale models for SE conditions. This problem would include research on surface energy exchange. A product from this research might be computer capability to display selected weather information on one mile grids.
3. Develop guides for non-fire uses of weather and climatological information for forest managers.

One can see that 4 of the 6 major research needs agreed upon at the Atlanta Symposium have translated directly into SFFL research problem areas while the remaining two are indirectly addressed.

The final step, to be completed this summer prior to the expiration of the current RWU descriptions, is for each project to develop a formalized plan of action for final approval and concurrence by Station managment and the Washington Office. Once finalized, problem analyses outlining specific areas of study for each broad problem area will be developed and individual studies initiated.

Like most federally funded programs, fire research nationwide has suffered cutbacks in both funding and staff. Once the immediate trauma of these events

passed, however, I have been pleasantly surprised at the way the Macon Fire Laboratory staff has bounced back with renewed commitment and vigor. Instead of retrenching in response to these funding shortfalls, we see this as a unique opportunity to become even more responsive to user needs. For example, the Fire Science Project envisions several joint studies with timber management research to integrate fire and timber objectives into combined studies thereby increasing the usefulness of the study results while at the same time reducing overall study costs. The staff looks forward to, and solicits your ideas in, exploring new innovative ways of cooperation and support to help solve southern fire management needs.